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Attorney Docket: D922/1376P

5,786,276 ("Brooks"). The Examiner also rejected claim 5 under 35 U.S.C. § 103 as being obvious in light of Shields in view of U.S. Patent No. 6,222,214 ("Wuu"). The Examiner also rejected claim 6 under 35 U.S.C. § 103 as being obvious in light of Shields in view of U.S. Patent No. 6,326,301 ("Venkatesan").

In the above-identified Office Action, the Examiner rejected claims 1-7 under 35 U.S.C. § 102 as being anticipated by Shields.

Applicant respectfully disagrees with the Examiner's rejection. Claim 1 recites:

1. A method for insulating a lower layer of a semiconductor device from an upper layer of the semiconductor device comprising the sequential steps of:
 - (a) providing an interlayer dielectric on the lower layer;
 - (b) providing an antireflective coating (ARC) layer, at least a portion of the ARC layer being on the interlayer dielectric;
 - (c) providing a plurality of via holes in the interlayer dielectric and the ARC layer;
 - (d) filling the plurality of via holes with a conductive material; and
 - (e) removing the ARC layer while reducing subsequent undesirable charge gain and subsequent undesirable charge loss over the use of a chemical mechanical polish in removing the ARC layer.

Thus, claim 1 recites a method that allows the ARC layer to be removed using a method other than a chemical mechanical polish (CMP). As recited in claims 2 and 3, the method can include a plasma etch and a plasma etch that uses a $\text{CH}_3\text{F}/\text{O}_2$ chemistry or a CHF_3/O_2 chemistry, respectively.

Applicant respectfully disagrees with the Examiner's rejection. Shields describes removal of a BARC layer using a fluorine containing chemistry, such as CF_4 , SF_4 , or NF_4 . Shields also states that the fluorine containing chemistry is "typically" in a gaseous form. Shields, col. 2, lines 60-63. Further, Shields indicates a specific temperature range for the etch using the fluorine

containing chemistry. Shields, col. 2, lines 60-63. Shields states that such a method for removing the BARC layer reduces the thickness variation of the underlying insulator. Shields, Abstract, lines 1-6. Although Shields functions well for its intended purpose, Shields fails to indicate that the etch using this particular chemistry at the temperature ranges indicated, or any other chemistry, would necessarily remove the ARC layer in a manner that reduces unanticipated (and undesirable) charge loss. Consequently, Shields does not anticipated claim 1.

Moreover, Shields is assigned to Advanced Micro Devices, Inc., the assignee of the present application. Shields is, therefore, unavailable for use as a reference in rendering the claims of the present application obvious. Consequently, the cited reference does not teach or suggest the method recited in independent claim 1.

Claims 2-6 depend upon independent claim 1. Consequently, the arguments herein apply with full force to claims 2-6. Accordingly, Applicant respectfully submits that claims 2-6 are allowable over the cited references.

The Examiner also rejected claim 3 under 35 U.S.C. § 103 as being obvious in light of Shields in view of Brooks.

Applicant respectfully disagrees with the Examiner's rejection. Claim 3 depends upon independent claim 1. Consequently, the arguments herein apply with full force to claim 3. In addition, Shields is assigned to Advanced Micro Devices, Inc., the assignee of the present application. Shields is, therefore, unavailable for use as a reference in rendering the claims of the present application obvious. Furthermore, the cited portion of Brooks fails to mention any mechanism for removing the AC layer in a manner that reduces subsequent unanticipated charge

loss over a conventional CMP. Consequently, Brooks fails to teach or suggest the method recited in claim 3. Accordingly, Applicant respectfully submits that claim 3 is allowable over the cited references.

The Examiner also rejected claim 5 under 35 U.S.C. § 103 as being obvious in light of Shields in view of Wuu.

Applicant respectfully disagrees with the Examiner's rejection. Claim 5 depends upon independent claim 1. Consequently, the arguments herein apply with full force to claim 5. In addition, Shields is assigned to Advanced Micro Devices, Inc., the assignee of the present application. Shields is, therefore, unavailable for use as a reference in rendering the claims of the present application obvious. Furthermore, the cited portion of Wuu fails to mention any mechanism for removing the AC layer in a manner that reduces subsequent unanticipated charge loss over a conventional CMP. Consequently, Wuu fails to teach or suggest the method recited in claim 5. Accordingly, Applicant respectfully submits that claim 5 is allowable over the cited references.

The Examiner also rejected claim 6 under 35 U.S.C. § 103 as being obvious in light of Shields in view of Venkatesan.

Applicant respectfully disagrees with the Examiner's rejection. Claim 6 depends upon independent claim 1. Consequently, the arguments herein apply with full force to claim 6. In addition, Shields is assigned to Advanced Micro Devices, Inc., the assignee of the present application. Shields is, therefore, unavailable for use as a reference in rendering the claims of the present application obvious. Furthermore, the cited portion of Venkatesan fails to mention any mechanism for removing the AC layer in a manner that reduces subsequent unanticipated charge

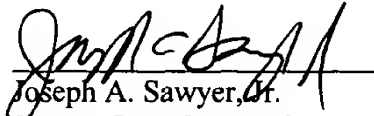
loss over a conventional CMP. Consequently, Venkatesan fails to teach or suggest the method recited in claim 6. Accordingly, Applicant respectfully submits that claim 6 is allowable over the cited references.

Accordingly, for the above-mentioned reasons, Applicant respectfully submits that the claims are allowable over the cited reference. Consequently, Applicant respectfully requests reconsideration and allowance of the claims as currently presented.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issue remain, the Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,

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Date


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